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# XIII.

PLANTÆ NOVÆ THURBERIANÆ: *The Characters of some New Genera and Species of Plants in a Collection made by* GEORGE THURBER, ESQ., *of the late Mexican Boundary Commission, chiefly in New Mexico and Sonora.*

BY ASA GRAY, M. D.

(*Communicated to the Academy, August* 9, 1854.)

IN the progress of the late Boundary Commission for fixing the line between the territories of the United States and Mexico, botanical collections were made, at various times, by Dr. C. C. Parry and Mr. Schott, under the command of Colonel Emory; by Mr. Thurber and Dr. J. M. Bigelow, attached to the immediate party of Mr. Commissioner Bartlett; and by Mr. Charles Wright, who, having formerly made, at his own charges, a botanical exploration from Eastern Texas to El Paso, through a region till then unvisited by any naturalist, was about to revisit New Mexico, when, in the spring of 1851, he was attached by Colonel Graham to his surveying corps.

A large portion of Mr. Wright's collections has been elaborated by myself, and published in two memoirs, by the Smithsonian Institution.* The plants gathered by Dr. Parry, Mr. Schott, and the more extensive collections made by Dr. Bigelow, were consigned to the able hands of my friend Dr. Torrey; and a detailed account of the whole is expected to make an important part of Colonel Emory's general report of the scientific results of this boundary survey.

Not a few of the new plants described by me from Mr. Wright's collection were gathered at the same time, or in some cases even previously, by Dr. Bigelow or by Mr. Thurber: but, as Dr. Bigelow's plants were not communicated to me, except in a few cases, where his name is mentioned in connection with them, and as all of Mr.

* Plantæ Wrightianæ Texano-Neo-Mexicanæ. Part I. 1850-52. Part II. 1853.

Thurber's collections were still in New Mexico, it has unavoidably happened that Mr. Wright's name alone appears as the discoverer or collector of such novelties, in the pages of the work above referred to. A full enumeration of the plants of Mr. Thurber's collection would bring to view this priority in many instances, and would show how largely he has subserved the interests of science by his extensive observations and collections, no small part of which were made under circumstances of great privation and hardship. This is particularly the case in respect to the plants gathered by him in the western part of Sonora, into which no other of our collectors had penetrated, and on the Gila River and the Californian desert beyond its mouth, a region which Colonel Emory and others had traversed, plucking here and there a scanty specimen; but in which no one except Mr. Thurber can be said to have botanized. Consequently these districts will be found to have furnished the principal new genera and species characterized in this communication. Figures of the most remarkable of these plants are in preparation: these it is thought best should be published in Colonel Emory's final report, along with other illustrations of the botany of our Mexican boundary, elaborated from the ample store of materials to which various collectors have from time to time contributed. Meanwhile, as this extended report is not likely to be completed and published for some time, I have the privilege of making known to the scientific world the following new genera and species, which I have been able to examine and to characterize.

To give some idea of the geographical situation, features, and characteristic vegetation of the region in which these plants were collected, Mr. Thurber has, at my request, furnished a series of brief notes, which are subjoined; and to which I have appended a few botanical remarks in the form of foot-notes.

"The route from Eastern Texas to the Rio Grande was traversed in the months of October and November, a season affording little of interest to the botanist.

"The winter of 1850 and 1851 was passed at El Paso, or more properly at Magoffinsville, a new settlement upon the 'American' side of the river and opposite the Mexican town. The latitude of this place is 31° 46′ 5″ and its elevation above the sea level about 3,800 feet. During the winter, vegetation was completely suspended; snow, ice, and sleet were frequent, and upon one occasion the mercury fell to 2° Fahr. The first indications of returning spring were seen early in March, in the sheltered ravines of the neighboring mountains, where *Rutosma Texanum*, *Draba micrantha*, *Œnothera chamænerioides*, and *Œ. primiveris* were collected; and a little later

the same localities furnished *Glossopetalon spinescens*,* *Vesicaria purpurea*, &c., while large tracts in the valley were covered with the bright yellow flowers of *Actinella Richardsonii*. Towards the end of March an excursion was made to the Hueco Mountains, about thirty miles east of the Rio Grande. The country between is an undulating sandy plain, with but scanty vegetation. A few miles before reaching the mountains occur what are termed the Hueco Tanks; these are huge piles of granite boulders rising abruptly from the plains. They are in two unequal masses, between which the northern road from San Antonio passes. These 'tanks' are of importance to travellers by that route, as they are the only watering-place, though a precarious one, for a long distance. Large quantities of water collect during the rainy season in the interstices of the rocks, where, being sheltered from evaporation, it often lasts through the dry summer. About the 'tanks' grew the Texan *Ungnadia speciosa*, just coming into flower; *Pentstemon Fendleri*, *Corydalis aurea*, besides the plants common about Magoffinsville. In a sheltered corner a few specimens of *Dryopetalon runcinatum*, Gray, were gathered. A visit to the mountain beyond afforded little beside what grew at the 'tanks.' *Cymopterus montana*, *C. Fendleri*, *Townsendia sericea*, and a few other species, were collected here.

"In April the party moved from Magoffinsville to the Copper Mines. From the former place to Doña Ana, a distance of sixty miles, the road lies along the valley of the Rio Grande, crossing an occasional spur of table-land. *Dithyrea Wislizeni*, *Astragalus triflorus*, *Sophora sericea*, and *Nasturtium obtusum* were abundant. The road crosses the Rio Grande some twenty miles above Doña Ana. This portion of the route is over an exceedingly barren country. A stunted variety of *Delphinium azureum*, *Oldenlandia humifusa*, and the ever-present *Larrea Mexicana*, were observed. The latter plant is common everywhere upon sterile table-lands; it is first met with low down in Texas, and continues beyond the Colorado of the West. The disagreeable odor it emits has given it the name of 'Creasote Plant' among Americans; and it receives the merited epithet of *Hideondo* (Stinking) from the Mexicans. It is used by the latter for heating their large mud ovens; the great quantity of resin it contains causing it to burn with a fierce flame, while the air of the whole neighborhood is filled with a stench, which, to one unaccustomed to it, is almost insupportable.

"At the new settlement of Santa Barbara, about fourteen miles from the crossing, we leave the valley of the Rio Grande. The road thence to the river Mimbres is tor-

* The fruit of this plant is follicular, being dehiscent down the ventral suture only. The seeds examined were all destitute of an embryo, as in the specimens gathered by Mr. Wright and Dr. Bigelow. — A. G.

tuous, on account of the mountain ranges to be avoided: it passes over sterile, low, rounded hills, strewed in places with fragments of chalcedony. Among the plants collected on this portion of the route were *Berberis pinnata*, *Œnothera albicaulis*, *Œ. Wrightii*, *Dalea Jamesii* and *D. nana*, *Krameria lanceolata*, &c. Near the camp on the Mimbres grew *Œnothera Hartwegii*, var., and a fine *Astragalus*, which has been dedicated to Dr. J. M. Bigelow, an enthusiastic botanist, and the surgeon to the Commission.

"Soon after arriving at the Copper Mines an excursion was made to the Mimbres, striking it at a point several miles above the crossing: it is reached in a distance of eight miles by following a narrow trail through the mountain. In this mountain pass *Lonicera dumosa*, Gray, was found in flower (it was described in Plantæ Wrightianæ from fruiting specimens only): the flowers are yellowish and inodorous. *Fendlera rupicola* grew in abundance upon the sides of the mountain. This would be a very ornamental shrub in cultivation, bearing a profusion of white flowers, with which the pink unexpanded buds appear in marked contrast. A new *Robinia* was met with here just in flower; it is hoped that some future collector will obtain the seeds, as its low stature, neat habit, and abundant rose-colored flowers render it a desirable addition to our ornamental shrubs. The valley of the Mimbres at this point is broad, and covered with luxuriant grass. Traces of former inhabitants were seen. The ground-plan of houses was distinctly visible, and fragments of pottery, of quality and markings similar to those collected afterwards among the so-called Aztec ruins, were abundant. *Fraxinus velutinus*, Torr. and *Negundo aceroides* grew along the margin of the river. Among the gravelly knolls which border the bottom *Lupinus pusillus*, *Astragalus Missouriensis* and *A. tephrodes*, *Erigeron divergens*, var. *cinereum*, *Diplopappus ericoides*, and several *Nyctaginaceæ*, were collected.

"In the latter part of May a trip was made into the State of Sonora as far as Arispe, its former capital. The wagon route of Colonel Cooke was followed as far as Agua Prieta or Black-Water Creek. The country is generally desert-like, consisting of broad, rolling sandy plains, with isolated ranges of equally barren mountains. *Baileya*, *Riddellia*, and other yellow Compositæ, were abundant; as also were *Eschscholtzia Californica*, var., *Ionidium lineare*, and *Malvastrum leptophyllum*. Occasional large tracts were passed where the vegetation had a singularly dreary aspect, being made up of tall Yuccas, *Dasylirion*, and *Opuntia arborescens*. Of the latter, fine specimens were seen, attaining the height of ten or twelve feet. When covered with its crimson flowers and lemon-yellow fruit it is a truly beautiful object. Near the dry bed of a lake (Las Playas, of the maps of that region), *Cleome Sonoræ*, *Cleomella longipes*, and

*Sidalcea malvæflora*, var. *albiflora*, were abundant. At a camping-place near the Sierra de los Animos a new *Stephanomeria* was collected.

"The Sierra Madre, the back-bone of Mexico, was crossed by the Guadalupe Pass, through which the persevering Colonel Cooke first took a wagon-train. The descent in a few miles is about a thousand feet. The pass afforded *Arctostaphylos pungens*, *Rhus microphylla*, *Baccharis ramulosa*,* *Fouquiera splendens*, *Ceanothus Greggii*, and several *Pentstemons*. The small stream at the bottom of the pass is thickly bordered by *Platanus Mexicanus* and *Fraxinus velutinus*.

"The town of Fronteras was reached by striking off from Agua Prieta in a southerly direction. Upon the low hills between these two points were larger and more abundant specimens of *Fouquiera splendens* than were seen in any other place. A valley called Mabibi or Mababi, which lies between Fronteras and Bacuachi afforded several new plants, among them an undescribed *Ranunculus*, an *Astragalus*, and a Papilionaceous undershrub which has been doubtfully referred to *Daubentonia:* also *Rubus trivialis!* and the exquisitely beautiful *Aquilegia leptocera*, var. *flava*.

"From Bacuachi to Arispe the course of the Sonora River was followed. Shortly after leaving the former place, it passes through a narrow cañon, the rocky walls of which rise perpendicularly for several hundred feet on either side. The whole pass was brilliant with the intensely scarlet flowers of a fine *Erythrina*, which projected from almost every crevice.† In this cañon was first noticed a new

* *Baccharis ramulosa* = *Aplopappus ramulosus*, DC., and *Linosyris* (*Aplodiscus*) *ramulosa*, Gray, Pl. Wright. 2. p. 80. Mr. Thurber appears to have gathered the male plant only; and this alone occurs in Wright's and other collections. But I have seen female specimens, collected by Dr. Bigelow or Dr. Parry, which show, what was not before suspected, that this is a real *Baccharis*. In Thurber's specimens the bristles of the pappus are clavellate-barbellate at the summit, which is scarcely noticeable in the original plant of herb. Martius: but Wright's No. 1400 is intermediate. — A. G.

† This *Erythrina* is also in Gregg's Mexican collection, No. 586 (without fruit); from Paso de Gallinero, near Dolores, in Queretaro? It accords so nearly with the imperfect character of *E. coralloides*, DC., that I venture to apply that name to it; although the petioles are often somewhat aculeolate, and the pods are minutely cinereous-pubescent. According to Dr. Gregg's notes, it forms a shrub or small tree, from five to ten feet high. Mr. Thurber remarks that the trunk is a foot in diameter, but subterranean. The short and stout prickles are solitary under the leaves. The foliage, branchlets, &c. are minutely tomentose-pubescent when young, at length glabrate. Leaflets dilated-ovate or deltoid-ovate, truncate at the base, 2 or 2½ inches long and 2½ to 3 inches wide, subcoriaceous. Raceme short and dense. Flowers 2 inches long. Calyx 3 or 4 lines long, truncate, a little oblique. Corolla "brilliant scarlet"; the vexillum linear-oblong, straight; the wings and keel included in the calyx. Stamens 10. Pods 5 or 6 inches long, torose, cinereous-puberulent, few-seeded, tipped with a cuspidate point of an inch in length, while the similar attenuated base tapers into a stipe of the same length, tardily dehiscent. Seeds oval-oblong, a little over half an inch in length, bright red, with a narrow and pale hilum. — A. G.

*Cereus*,* which was afterwards met with more abundantly and of larger growth in other parts of Sonora. The only flower seen was secured, and from it the description by Dr. Engelmann, in Silliman's Journal for May, 1854, was taken.

"Arispe, the terminus of the journey, is situated near the thirtieth parallel. Here the pomegranate and fig attain great perfection, and here we first saw *Opuntia Tuna* cultivated for its fruit.

"A rapid return march was made to the Copper Mines, where our time was too much occupied by preparations for a longer journey, to allow me to make many collections. In a visit to the pine woods near the mines, however, a new *Potentilla* with blackish-purple flowers, *Astragalus humistratus*, and a small Potato resembling *Solanum tuberosum*, were collected.

"In August the expedition for the survey of the Gila left the Copper Mines to join the Mexican Commission, then near the San Pedro River; from which point a party proceeded to the town of Santa Cruz. This section of the journey, especially the vicinity of Santa Cruz, afforded a rich harvest of new plants, most of which have been noticed in the publication of the collection of Mr. Charles Wright; that excellent collector having accompanied the expedition as far as to this point.

"Santa Cruz is situated near the source of a small stream of the same name, in a narrow valley, bounded by high and rounded hills, the ravines of which abound in interesting plants. A new *Perezia*, not met with by Mr. Wright, was collected among the hills; and a curious *Melampodium* was found on the margin of the river.

"Failing to procure the provisions, in search of which Santa Cruz was visited, a small party, which I accompanied, proceeded to Ures, the present capital of Sonora, taking the road by Magdalena, Cucurpe, Rayon, and other small towns. In a cañon near the deserted mission of Cocospera, *Cereus giganteus* was first met with. The first specimen brought the whole party to a halt. Standing alone upon a rocky projection, it rose in a single unbranched column to the height of some thirty feet, and formed a sight which seemed almost worth the journey to behold. Advancing into the cañon, specimens became more numerous, until at length the whole vegetation was, in places, made up of this and other Cactaceæ. Description can convey no adequate idea of this singular vegetation, at once so grand and dreary. The *Opuntia arborescens* and *Cereus Thurberi*, which had before been regarded with wonder, now seemed insignificant in comparison with the giant Cactus which towered far above them. In this cañon an old Texan acquaintance, *Sesbania macrocarpa*, was observed. *Kosteletzkya*

* *Cereus Thurberi*, Engelm.; a species allied to *C. giganteus*, Engelm. — A. G.

*Virginica* was abundant, in company with a beautiful plant of the same order, which proves to be the type of a new genus allied to *Thespesia.* Near the town of Rayon several trees of *Fouquiera spinosa*, H. B. K., were found just coming into flower (in October), while the leaves were beginning to fall. The habit of the tree is quite unlike that of *F. splendens:* the trunk rises three or four feet before throwing out its straggling and crooked branches. The bark of the old branches is yellowish-green; the flowers are crimson.

"The country between Magdalena and Rayon is mountainous and impassable by wagons. Between the latter place and Ures, the sombre, rounded gravel hills appear again, and in the valleys between them are large groves of palms. Specimens sufficient for the identification of the species were not secured; the fruit, which contains a sparing sweetish pulp, is gathered in large quantities by the Mexicans. Among these hills an undescribed *Guaiacum* was found: also a variety of *Hiræa septentrionalis*,* and a narrow-leaved *Jacquinia.* At Ures all botanical collections for the year were suspended. Causes which it would be out of place here to mention had brought the party thus far into the interior of Sonora; and a series of untoward events detained it for many weeks at this place.

"Christmas at length found us again at Santa Cruz, *en route* for the Gila. The journey thence to San Diego, on the Pacific, was one of toil and disaster. Portfolios, paper, and everything that could relieve the starving animals, were abandoned, and at length the whole party were making the dreary march across the Colorado desert on foot. Near the western edge of this desert several early (February) flowers were noticed, of which a few scanty specimens were preserved in a pocket note-book; among them were two new Compositæ, one a new Asteroid genus, the other a third *Psathyrotes.*

"The considerable collections made while in California were mostly of well-known plants. The return journey to the Rio Grande was commenced in May, 1852. At San Isabel, a new suffruticose, silvery-canescent *Hosackia* was found upon the rocks.

* Hiræa septentrionalis, Adr. Juss. Monogr. Malp. 2. p. 309: var. *foliis minoribus sæpissime oblongo-lanceolatis.* — *H. Coulteri*, Planch. in Herb. Hook. ined. "Called *Gallineta:* the root said to be a specific in syphilis." — This is the same plant as No. 856 of Coulter's Mexican collection, from Sonora Alta, which is named, I believe, by Dr. Planchon, in the Hookerian herbarium, *Hiræa Coulteri*, n. sp. And indeed the specimens seem at first view sufficiently distinct from *H. septentrionalis.* But I find no satisfactory character to distinguish them; and Coulter's No. 860 is intermediate. Perhaps it is also De Candolle's *H. macroptera*, founded on one of Moçino and Sesse's drawings. The inflorescence inclines to be cymose and trichotomous. The wings of the fruit are very broad and thin, nearly equal, often more or less confluent at the base, sometimes slightly so, as they appear to be in some fruits of the true *H. septentrionalis*, or even distinct.

"At San Felipe, a miserable Indian village, the country begins to put on a barren aspect, and oaks and other trees are no longer met with. The sterile table-lands bear only stunted Mezquit, *Larrea*, and other plants characteristic of the dry North-Mexican flora. At this place a new *Zizyphus*, with a very large and woody fruit, was collected. This was also sent home by Dr. Parry, and will be described by Dr. Torrey in the forthcoming account of that gentleman's collections. A plant, which proves to be a new genus in Eriogoneæ, a new *Porophyllum*, *Thamnosma montanum*, Torr.,* and *Simmondsia*, Nutt., were also found in the same locality.

"The desert was crossed in the night, to avoid the heat of the sun, and no opportunity was afforded for noticing its scanty vegetation. The Colorado River, near the junction of the Gila, presents little variety as to the vegetation, which is chiefly of Willows, Cotton-wood, Mezquit, a few species of *Baccharis*, and *Tessaria borealis*. The latter plant is exceedingly abundant. The quarters at Fort Yuma were built of frames of poles, covered with the long and straight stems of the *Tessaria;* beneath this shelter the tents were pitched, and protection was thus afforded from the otherwise insupportable sun.

"The distance from the confluence of the Gila and Colorado to the Pimo Villages is about two hundred miles. The valley of the Gila, the general direction of which is followed by the road, is narrow, and bordered by high table-lands, which sometimes extend quite to the margin of the river. Isolated ranges of rugged mountains, without trees or verdure, are seen in all directions, and the whole region has a desert-like character. The route is almost entirely destitute of grass; and the only food for animals is the pulpy pods of the Mezquit (*Algarobia glandulosa*). These at the season of our journey (June) were in perfection; and the animals belonging to the party not only subsisted, but really improved in condition, during the time it was almost their sole food. Among the new plants furnished by this region is a curious *Dalea*, a very spinose shrub of four or five feet in height, with light greenish bark and deep indigo-blue flowers. Another shrubby species, *Dalea Emoryi*, which was mentioned by Dr. Torrey in Colonel Emory's Report, but not characterized, owing to the want of sufficient materials, grew in the ravines. A singular parasite was observed upon some specimens, which proves to be a new species of *Pilostyles*. In the bottom near Independence Rock (Johnston's Report), a remarkable new genus in Loasaceæ (*Petalonyx*) was discovered. Along the margins of the river several Cyperaceæ, yet unexamined,

* This plant, which was imperfectly characterized, from a poor specimen, in Fremont's Second Report, proves to be nearly, if not wholly, congeneric with the *Rutosma Texanum*, Gray, Gen. Pl. t. 155, an herbaceous, Texan and North-Mexican, truly Rutaceous plant, which was published considerably later.

were gathered, and *Erigeron Canadense* and *Oligomeris glaucescens* were common. *Cereus giganteus* occurs frequently along the table-lands, and near the villages of the Pimos becomes very abundant. It was our good fortune to find this species both in fruit and flower, affording materials for the completion of its history, which has been done by Dr. George Engelmann in a paper before referred to. The fruit of this Cereus is an important article of food among the Indians of this region, who collect it in large quantities and roll it into balls, which keep well without other preparation. The seeds from portions of this *conserve*, brought home, have promptly germinated, so that this remarkable species is secured for our green-houses.

"A visit was made to the Salinas River, which, coming from the northeast, joins the Gila below the Pimo villages. Its valley is broader than that of the Gila, but its general character is the same. Specimens of two undetermined Leguminous trees were collected, in fruit only, upon the table-lands, between the two rivers; and a curious thorny shrub, forming the new genus *Holacantha*, was found in the same vicinity.

"The party left the Gila in July; and from that time until its arrival at El Paso, in the middle of August, scarcely a day passed without severe rains. The route, which was by the way of Tucson, Santa Cruz, Janos, and Corralitas, produced few novelties. A new *Malvastrum*, however, was collected in Santa Cruz valley, and one or two specimens of a new genus in Compositæ Senecioneæ. Between Corralitas and El Paso, *Amoreuxia Schiedeana* * was abundant upon the sandy prairies, and in the medanos, or sand-hills, through which the road passes near El Paso, along with *Pentstemon ambiguum* and *Dalea scoparia.*

"Late in 1852, the party made a journey from El Paso, through the States of Chihuahua, Durango, Cohahuila, and Nuevo Leon, to Camargo, on the lower Rio Grande. The route was almost precisely that taken by Dr. Wislizenus, to whose excellent account of the features of the country little can be added. From the lateness of the season, only a few botanical specimens were made. Among them, however, occurs *Tridax bicolor;* † an unpublished *Dalea* (*D. Greggii*, Gray), which was common along

* The corolla, according to Mr. Thurber's memoranda, is "deep orange, with a brownish spot in the centre"; approaching so nearly to De Candolle's phrase, "*flores rubelli*," as to render it altogether probable that the *A. Schiedeana* of Planchon is the original *A. palmatifida*, DC. — A. G.

† *Tridax bicolor*, Gray, Pl. Fendl., p. 104. Bachimba, Chihuahua, among rocks; November. A single specimen was gathered, of a taller plant than that of Wislizenus, from which the species was characterized, being a foot or two in height; the head larger than in *T. procumbens*, and with rose-purple rays. The lower leaves are opposite; but all the upper alternate, and on very long petioles. The pappus, in the specimen, is not tinged with purple. — A. G.

the road, and had already been gathered at the same place by the late Dr. Gregg; a truly shrubby *Argemone*, which was found only with mature fruit; and a new *Acacia*, so far as can be judged from the flowers, with remarkably thick and coriaceous leaves. The two latter were met with only in the mountain pass of La Peña, near the town of Parras." (G. THURBER.)

## NEW GENERA AND SPECIES.

RANUNCULUS HYDROCHAROIDES (sp. nov.): glaberrimus; caulibus floriferis erectis (spithamæis) foliosis stolonibusque repentibus validis; foliis longe petiolatis integerrimis orbiculari-cordatis ovato-rotundis ovalibusque, caulinis sensim oblongis basi attenuatis seu spathulatis; petiolis basi scarioso-dilatatis; pedunculis oppositifoliis unifloris folio paullo brevioribus; petalis 5 – 8 obovatis (luteis) sepala subduplo superantibus glandula semilunari crassa instructis; carpellis pauciusculis lævibus stylo brevissimo apiculatis in capitulum subglobosum acervatis. — In wet marshes, Mabibi, Sonora; June. Perennial. Stems, and also the long stolons, stout, striate, fistulose. Leaves rather fleshy, diverse in shape, the lowest usually rounded and more or less heart-shaped, 6 to 15 lines long; the larger cauline $1\frac{1}{2}$ inch long, these gradually becoming narrower and tapering into the long petiole. Sepals orbicular. Petals $2\frac{1}{2}$ to 3 lines long, obtuse, tapering into a conspicuous broad claw, at the summit of which a thickened gland, with a small sinus above it, takes the place of the ordinary scale. Stamens 20 or more. Carpels 15 to 20, in a globular head of only 2 lines in diameter. — This belongs to the same group, apparently, with *R. salsuginosus*, *Cymbalaria*, &c., but is very different from any described species.

ARGEMONE FRUTICOSA (sp. nov. Thurber, in litt.): glaberrima, valde glauca; ramis patentibus lignosis undique foliosis inermibus; foliis crassis oblongis sinuatis margine spinosis; floribus inter folia sessilibus; capsula ovata echinato-spinosa. — In the mountain pass of La Peña, Cohahuila; November, 1852; in fruit. — Hazardous as it always is to propose new species of *Argemone*, especially upon incomplete materials, yet there would seem to be little room for doubt in respect to this plant; which forms a stunted shrub, of $1\frac{1}{2}$ to $2\frac{1}{2}$ feet in height, with its rigid and divergent branches woody almost to the growing tips, the older ones squarrose with the crowded and salient

scars of fallen leaves, the younger strongly glaucous-white, as are the thick leaves. The latter are only an inch or an inch and a half long, smooth and glabrous, nearly veinless, their short teeth armed with long and stout fulvous prickles, and one or two smaller ones occasionally appear on the midrib. The specimens are wholly past flowering. The dehiscent capsules scarcely exceed half an inch in length, are mostly five-valved, and armed with short prickles with tuberculate-dilated bases, but glabrous. Seeds globular, with less salient reticulations than in *A. Mexicana*. The wood of the branches is hard and close-grained.

Malvastrum Thurberi (sp. nov.): pube brevi stellata scabrido-pubescens; foliis subcordato-rotundis crenatis nunc subtri-quinquelobis (lobis obtusissimis) subtus cinereis; floribus fere sessilibus glomeratis, glomerulis plurifloris remotiusculis secus ramos superne aphyllos spicam interruptam efficientibus; bracteolis minimis; calyce fulvo-tomentoso, lobis late triangulari-ovatis tubo paullo brevioribus; corolla (majuscula) purpurea; coccis 10 – 12 muticis fere glabris. — In a valley near Santa Cruz, Sonora; July, 1852. Also found near San Diego, California, by Dr. Parry. — Stem 3 to 5 feet high, herbaceous; the base not seen. Leaves 2 inches or less in length, mostly glabrate above; the floral ones soon reduced to small bracts. Flowers about as large as in *M. coccineum*, densely glomerate, and as if falsely verticillate, along the upper and nearly leafless portion of the flowering stems. Mature cocci glabrous, except at the summit, two-valved.

Abutilon Thurberi (sp. nov.): humile; caulibus gracilibus cum petiolis pedunculisque pilis longis patentibus hirsutissimis; foliis cordatis crenato-serratis acuminatis membranaceis utrinque viridibus glabratis; pedunculis gracilibus axillaribus folio brevioribus unifloris seu ad apicem ramorum subcorymbosis; calycis laciniis ovatis acuminatis petalis aureis dimidio brevioribus; capsula pentacocca, coccis membranaceis demum patentibus bivalvibus longe aristatis trispermis. — Magdalena, Sonora; in shady places; October, 1851. — Stems a foot high, erect or spreading. Leaves about an inch and a half in diameter, thin, when young beset with a few hairs. Peduncles 6 to 9 lines long. Flowers rather smaller than those of *A. crispum*. Calyx beset with the same long and slender hairs as the peduncles, and also somewhat viscous. Mature carpels with the body glabrate, ovoid, or oblong, not bladdery, about the length of the calyx, abruptly tipped with an exserted and slender, at length two-parted, sparsely hirsute awn, which is fully half as long as the cell. Seeds 2 or 3, superposed.

It may be well to notice that specimens of *Abutilon crispum* in this collection, and also of *A. Texense*, in this and in some of Mr. Wright's specimens, have their foliage beset with the remarkable *Uromyces pulcherrima* of Berkeley and Curtis, which was originally sent from Texas by Mr. Wright.

Near Ures in Sonora, Mr. Thurber gathered a specimen of what is probably a variety of *Abutilon Sonoræ*, Gray, Pl. Wright.: but the branches, petioles, &c. are wholly destitute of the long and shaggy hairs of Mr. Wright's plant; the leaves are not lobed, and the carpels are almost muticous. Future collectors in this region must determine whether these characters are constant.

Mr. Thurber's collection also contains specimens of the small-flowered *Anoda* mentioned under *A. hastata* in Pl. Wright. 2, p. 23. Were the petals "ochroleucous" instead of "bluish-white," it would well accord with the *A. parviflora*, Cav. or *A. crenatiflora*, Ort. The carpels are equally few and muticous; but the ripe fruit is not yet known.

## THURBERIA, Nov. Gen. Malvacearum.

Involucellum triphyllum, persistens. Calyx cupuliformis, repando-truncatus, unguibus petalorum patentium brevior. Tubus stamineus columnæformis, superne filamenta plurima filiformia exserens: antheræ reniformes. Ovarium triloculare; loculis 6 – 8-ovulatis verticaliter incomplete bilocellatis, semisepto tenui mox in lanam soluto. Stylus terminalis, indivisus: stigma clavatum, elongatum, tricostatum. Capsula coriacea, trilocularis, loculicide trivalvis; loculis biseriatim 5 – 8-spermis; valvis margine lanigeris, medio septa seminifera gerentibus; columella centrali nulla. Semina obovata, angulata; testa crustacea, epidermide membranacea tenuissime lanata. Albumen nullum. Embryo conduplicatus; cotyledonibus foliaceis nigro-punctatis maxime complicatis radiculam inferam fere includentibus. — Herba elata, speciosa, glabra; ramulis gracilibus floribusque punctis nigricantibus conspersis; stipulis caducis; foliis petiolatis tripartitis summisve bifidis vel integris, lobis lanceolatis acuminatis integerrimis; pedunculis axillaribus et terminalibus unifloris medio articulatis; corolla alba post anthesin rosea.

THURBERIA THESPESIOIDES. — Sonora; in a cañon, between Cocospera and Barbasaqui; October, 1851. — An herbaceous, doubtless perennial herb, 4 to 10 feet high, copiously branched; the branchlets slender, somewhat angled, marked at the insertion of the leaves by the scars of the stipules, which must be truly caducous, as they have fallen even from the uppermost nodes. Petioles about an inch and a half long, slen-

der. Leaves thin; their divisions 2 to 4 inches long, 6 to 12 lines wide towards the base; the ribs dotted underneath (like the branchlets, calyx, corolla, &c.), that of the middle division usually bearing a linear excavated gland near the base: the uppermost leaves often either unequally two-parted or entire, and ovate-lanceolate. Peduncles about an inch long. Leaflets of the involucel narrowly lanceolate, entire, 3 to 5 lines long, nearly twice the length of the cup-shaped and truncate entire calyx. Corolla of five spreading, dilated-obovate petals, which are convolute in æstivation, an inch in length; their claws woolly-pubescent at the margin, united at the base by means of the stamineal column. The latter is considerably shorter than the petals, and its upper half is antheriferous quite to the apex, which is divided into five subulate sterile filaments. Style longer than the androecium; the exserted part gradually thickened upwards, and triangular, the salient angles stigmatose for nearly their whole length; the apex undivided. Ovary globose; the three cells at first vertically divided in the middle by a nearly complete, but thin and delicate, spurious partition, projecting from the back of each cell, which, however, as the ovary enlarges after anthesis, is soon broken up into long and delicate horizontal shreds or hairs, that persist even in the ripe pod, stretching from the dorsal suture almost to the axis, between the two rows of seeds. Ovules ascending, nearly anatropous, biserial. Capsule ovoid, half an inch long, obtuse and pointless, or nearly so, the base subtended by the persistent disc-shaped calyx and the involucel. Seeds 2 to $2\frac{1}{2}$ lines long, sparingly and minutely woolly. Albumen none, or a mere pellicle lining the membranaceous tegmen. Cotyledons large and broad, incumbent on the radicle, transversely contortuplicate, and also longitudinally plicate and folded around the radicle.

This genus, it will at once be perceived from the characters here assigned to it, belongs to the tribe *Hibisceæ*, and is most nearly related to *Thespesia*, having the same calyx, involucel, androecium, &c. It is well distinguished, however, by its trimerous gynœcium, and its dehiscent (three-valved) capsule, with the false dissepiments reduced to a mere fringe of delicate woolly hairs; to which may be added the persistent involucel, the more complicate embryo, apparently without any albumen, and the habit of the plant. Founded as the genus is upon perhaps the most elegant plant of the valuable collection of Mr. Thurber, who alone appears to have met with it, I have great satisfaction in dedicating it to the discoverer, himself well known as a meritorious botanist, long before he engaged in the service of the Mexican Boundary Commission; — in the course of which, besides fulfilling the proper duties of an arduous and responsible office, he has been able largely to increase our knowledge of the botany of the whole desert frontier.

## HOLACANTHA, Nov. Gen. Simarubacearum.

Flores abortu dioici. *Masc.* Calyx brevis, 7 – 8-partitus, lobis in alabastro juniore imbricatis. Petala 7 – 8, hypogyna, oblonga, concava, æstivatione imbricata, cito decidua. Stamina 12 – 16, sæpius numero petalorum dupla, margini 12 – 16-crenato disci clypeati vel subcyathiformis inserta, brevia; filamenta inappendiculata, crassa, fusiformia, gibbosa, villosissima: antheræ oblongæ, biloculares, basifixæ, introrsæ, mox deciduæ, loculis longitudinaliter dehiscentibus. Ovarii abortivi vestigium parvum in fundo disci. *Fœm.* Calyx et corolla? maris. Stamina abortiva 7 – 8, filamentis subulatis villosis, antheris inanibus. Ovaria sæpius 6, gynophoro brevissimo imposita, conniventia, basi tantum mediante columna centrali brevissima connata, uniovulata: styli totidem terminales, ima basi subcoaliti, deinde radiato-divergentes, intus prorsus stigmatosi. Ovulum semianatropum, sutura ventrali infra medium insertum, adscendens, micropyle tenui supera. Drupæ siccæ 4 – 6, sessiles, stellatæ, ovatæ, demum e carpophoro brevi 4 – 6-fido secedentes; epicarpio tenui; putamine crustaceo lævi. Semen ovatum, acuminatum; testa tenui; rhaphe brevissima. Embryo intra albumen carnosum parcum; cotyledonibus obovatis planis subfoliaceis; radicula breviuscula supera. — Frutex orgyalis, aphyllus, spinis validis horridus; ramis adscendentibus; floribus parvis secus ramulos spinescentes glomeratis.

Holacantha Emoryi. — On the desert between the Gila River and Tucson; and on the table-lands near the river Salinas, north of the Gila (the latter in July, 1852, in flower.) — Shrub 5 to 8 feet high, leafless, so far as known; but the ascending branchlets furnished with a few small and alternate, oblong or linear, entire scales or bracts, of a line or two in length, which are soon deciduous. The wood of the branches is moderately hard; the bark smooth and light green, on the younger parts cinereous with a close and soft pubescence. The alternate, terete, and rigid branchlets are all produced into stout and sharp thorns. Flowers apparently dicœcious (at least the male and female flowers occur on different specimens in the collection), glomerate on the sides of the branchlets, which they sometimes nearly cover, so as to form a kind of spike or spiciform thyrsus, subsessile or occasionally on short pedicels. *Male.* Flower-buds globose-oblong, a line and a half in diameter; both the calyx and the corolla canescently pubescent externally. Sepals 7 or 8, about half the length of the corolla in the full-grown flower-bud, triangular-ovate, united at the base. Petals as many as the sepals and alternate with them, imbricated in the bud, when they are concave and somewhat carinate, their margins and inner surface apparently greenish-white, inserted

on or underneath the margin of the hypogynous, or nearly hypogynous, clypeate and concave disc, apparently deciduous nearly as soon as they expand. Stamens sometimes 12 or 13, usually 14 or 16, inserted in the crenatures of the edge of the disc, scarcely longer than the petals: filaments fusiform, very much thickened in the middle, oblique, very villous except at the tapering apex, destitute of any appendage or scale. Anthers linear-oblong, erect, smooth, emarginate at both ends, introrse, early falling away from the less deciduous filaments; the cells opening longitudinally for their whole length. A minute, 5 – 6-radiate vestige of the abortive gynœcium occupies the concave centre of the disc. *Female* calyx and probably the corolla as in the male flowers; but only fertilized flowers occur in the specimens, from which the petals have fallen, if there were any. Stamens apparently 7 or 8, with smaller and slightly thickened filaments, and imperfect anthers. Ovaries commonly 6, verticillate and connivent on a very short and depressed disc or gynophore, semiovate, glabrous, closely sessile, united only at the very base, by means of a short central column: styles arising from the apex of the ovaries, slightly united at their origin, but immediately distinct and spreading, or radiately divaricate, shorter than the ovaries, deciduous after anthesis, their whole inner or upper face stigmatic. Ovule solitary, attached by a broad but extremely short funiculus to the ventral suture between the middle and the base of the cell, ascending, ovate-lanceolate in form, semianatropous, but the rhaphe very short, the summit tapering into the slender micropylar apex. Fruit of several dry drupes, usually 4 or 5 ripening, stellately spreading, each 3 or 4 lines long, ovoid, slightly compressed laterally, blunt, when they fall separating from as many slender and ligneous divisions of the short central axis with which the inner angle toward the base was coherent: epicarp thin, at first fleshy: putamen crustaceous, almost bony, indehiscent, smooth and even. Seed filling the cell, ascending, almost erect, a very short rhaphe connecting the hilum with the large and orbicular basal chalaza; the integument very thin; the micropyle pointed. Albumen fleshy, in small quantity, inclosing the large embryo, which occupies nearly the whole length and breadth of the seed. Cotyledons straight and flat, thin, between foliaceous and fleshy. Radicle superior, not retracted, about one fourth the length of the cotyledons.

This curious shrub, or small tree, was first noticed by Colonel Emory, who, however, obtained only naked branches, one of which is figured (Fig. 14) on one of the plates of *Cacteæ*, &c., appended to his Report. In the notes Dr. Engelmann suggested that it might prove to be another species of *Kœberlinia*, which, indeed, it resembles in its whole habit. The flowers and fruit, now made known by Mr. Thurber, are very different from those of *Kœberlinia*; but yet not essentially unlike those of the order

(*Rutaceæ*, including *Zanthoxylaceæ*) to which this anomalous genus has been provisionally referred. The nearest relative of our plant, however, is found in the adjacent small family of *Simarubaceæ*, namely in *Castela*, of Turpin; — a genus formerly annexed to the *Ochnaceæ*, but lately and more properly placed in *Simarubaceæ* by Planchon, in his revision of this group.* *Castela* and the present genus, however, make a close approach to the *Zanthoxyleæ*, from which they mainly differ in the uniovulate carpels, the dotless leaves, and the want of aromatic qualities. The habit of *Holacantha* is much the same as that of *Castela*, except that the leaves, so far as known, are reduced to minute and deciduous bracts; and the Quassia-like bitterness is also apparent in the bark, but hardly in the wood. The essential floral differences are merely the 7 – 8-merous (instead of tetramerous) flowers, the thickened filaments in the male blossoms, and the insertion of the ovule at a point so near the chalaza that this organ, as well as the seed, is truly ascending instead of pendulous. The name chosen for the genus, from ὅλως, wholly, and ἄκανθα, a thorn or thorn-bush, alludes to its perfectly spinous branches throughout.

Guaiacum Coulteri (sp. nov.): stipulis parvis spinescentibus; foliolis 3 – 5-jugis lineari-oblongis mucronatis basi inæqualibus; capsula breviuscule stipitata 5-cocca, coccis ovalibus dorso acute carinatis. — On hills between Rayon and Ures, Sonora; October, 1851. — The specimens bear ripe fruit only. They are said by Sir William Hooker to accord with No. 779 of the Mexican collection of the late Dr. Coulter. The petiole and rhachis together are an inch or less in length, and slightly pubescent when young. Leaflets opposite, 6 to 8 lines long, minutely veiny. Flowers not seen. Capsule half an inch in length, and of somewhat greater breadth, very deeply 5-lobed, or by abortion 4-lobed, retuse at both ends, raised on a stipe of a line and a half in length, the summit tipped with a short point; the turgid lobes abruptly and sharply keeled on the back. Cotyledons with their margins directed to the axis of the fruit.

372. Astragalus (Phaca) Thurberi (sp. nov.): perennis, cinereo-pubescens, demum glabratus; caulibus subpedalibus striatis; stipulis triangularibus basi imo petiolo adnatis; foliolis 6 – 7-jugis carnosulis lineari-oblongis retusis; pedunculis brevibus cum spica 10 – 20-flora folio vix longioribus; floribus ochroleucis? (3 lineas longis) brevissime pedicellatis; calycis pubescentis dentibus subulatis obtusiusculis tubo cam-

* In *Lond. Jour. Bot.*, 5, p. 567. — Planchon attributes appendiculate filaments to Castela: but there are certainly no squamulæ in C. Nicholsoni.

panulato paullo brevioribus; leguminibus parvis (3 lin. diametro) globosis inflatis vix apiculatis chartaceo-membranaceis glabellis oligospermis, suturis haud introflexis. — Near Fronteras, &c., Sonora; on dry plains; June, 1851. — Stems rather rigid, erect or ascending, 6 to 10 inches high, leafy. Leaflets crowded, 4 or 5 lines long. Peduncles half an inch or an inch long; the rather close spike of about the same length. Pods not stipitate. Ovules 8 or 10. — An inconspicuous, but well-marked species, quite different from any known to me.

DAUBENTONIA? THURBERI (sp. nov.): frutescens; 1–2-pedali; ramis petiolisque dense viscoso-hirtellis; stipulis lanceolatis acuminatis striatis deciduis; foliolis 9–12-jugis ovalibus subretusis venosis glabris margine ciliolatis; racemis laxe paucifloris; calyce glabro bracteolis 2 caducis stipato, tubo cyathiformi basi obliquo longius angustato, limbo 5-fido, lobis subæquilongis, 2 superioribus oblongis acutiusculis, 3 inferioribus ovalibus obtusissimis; ovario pubescente longe stipitato. — Hill-sides, Mabibi, Sonora; June, 1851. — This must belong to the Galegeæ, near *Sesbania*, to which genus, in the absence of the fruit, I should have doubtfully referred it, except that the stigma is obtuse and terminal, and the ovary, neither much elongated, nor containing more than 10 or 12 ovules, is raised on a slender stipe, and manifestly shows, in the most advanced flower examined, two sharp edges at each suture, which I take to be the rudiments of four wing-like margins. On the latter account I provisionally place the species in *Daubentonia;* although the calyx differs widely from the known species of that genus. The calyx is four lines long, with an attenuated and oblique turbinate base of considerable length; and the lobes ($1\frac{1}{2}$ lines long) are broad, venulose, and three of them very obtuse; their margins sparingly glandular or ciliolate. The (yellow) corolla is fully as large as in the Texan *Daubentonia.* Bractlets as long as the narrowed base of the calyx, oblong, obtuse, faintly striate, caducous, as are the similar bracts. Stipules 2 or 3 lines long. Rhachis of the abruptly pinnate leaves 4 or 5 inches long, including the short proper petiole. Leaflets thin, half an inch in length.

LEGUMINOSA. — I may notice, for the purpose of directing towards it the attention of future explorers, an undetermined Leguminous tree called *Tesota* by the Mexicans, and said by Mr. Thurber to be common on the table-lands of the lower part of the Rio Gila. But no one appears to have preserved specimens of it except Mr. Thurber, who found it only with unripe fruit, in July, 1852. From the vegetation one would incline to refer the plant to the suborder Cæsalpineæ; but the withered remains of the andrœ-

cium found in one instance sheathing a sterile pistil, no less than the incurved embryo, prove it to be papilionaceous and probably of the subtribe Galegeæ. The branches, with the foliage, &c., are minutely canescent when young. They are armed with straight, mostly geminate, and apparently infra-stipular spines. Leaves often fascicled in former axils, simply and abruptly pinnate, very short-petioled, the leaflets occupying the rhachis almost down to the base: these are oblong or obovate, from 3 to 5 lines long, obtuse, pale and cinereous, minutely petiolulate, and veiny. Flowers apparently few in short axillary racemes. Pedicels as long as the calyx, nodding in fruit. Calyx canescent, two-lipped; the upper lip emarginate-two-lobed, the lower three-parted: lobes obtuse. Filaments diadelphous, 9 and 1. Ovary linear, one-celled, many-ovuled, glandular, nearly terete, sessile. Style after anthesis inflexed, villous above, often persistent on the legume: stigma terminal, capitellate. Legume indehiscent? thick and fleshy, about an inch long, somewhat compressed, sometimes two-seeded, when it is constricted between the seeds, more commonly one-seeded, when it is often lageniform, the seed being near the summit of the pod and the long base contracted and terete. Seed large, oval, not strophiolate. Cotyledons thick and fleshy, but flat, accumbent on the incurved and slender radicle.

Robinia Neo-Mexicana (sp. nov.): aculeis stipularibus subrecurvis; foliolis ellipticis oblongisve; pedunculis hispidiusculis calycibusque (dentibus subulato-lanceolatis) glanduloso-pubescentibus; racemis brevibus confertifloris; corolla rosea. — Dry hills on the Mimbres, New Mexico; May, 1851: in flower. (Western New Mexico, Dr. Woodhouse, in herb. Torr.: foliage only.) — "Shrub from 4 to 6 feet high." The racemes are short and many-flowered, like those of *R. viscosa*, and the flowers of about the same size. The peduncles are only minutely hispid, as in some forms of *R. hispida*, but the teeth of the calyx are proportionally shorter and less pointed than in that species. The branches exhibit none of the clammy exudation of *R. viscosa*; and the stipular spines are often three lines long, very sharp, and rather stout. The fruit is not yet known.*

Dalea Greggii (sp. nov.): suffruticosa, undique tomentoso-sericea, canescens; ramis floridis decumbentibus vel diffusis demum nunc glabratis glanduliferis; foliis bre-

* As this sheet is passing through the press, flowering specimens of this *Robinia*, gathered on the Mimbres by Dr. Henry, have come to hand; also fruiting specimens collected in the mountains east of the Rio Grande by Dr. J. M. Bigelow. The latter have nearly the foliage and exactly the pods of *R. viscosa*, — to which they might be referred except that there is no trace of the clammy exudation.

vissimis 2 – 3-jugis; foliolis confertis (sesquilineam longis) obovatis; spica brevi densissima; calyce cum bractea oblongo-lanceolata acuminata æquilonga sericeo-villosissimo, dentibus subulatis tubo æqualibus corolla flavo-purpurea brevioribus; vexillo dilatato-reniformi parvo. — (Dry hills, near Buena Vista, Cohahuila, *Dr. Gregg.*) Cerro Gordo, Cohahuila; November, 1852. — Of this I have long possessed imperfect specimens, gathered by Dr. Gregg in March, 1847. Mr. Thurber's specimens from the same district enable me to give its characters. It is a small, depressed or diffuse, suffruticose species; the ascending, decumbent, or even creeping flowering branches varying from 2 or 3 inches to a foot in length, slender, and minutely tuberculate with sparse glands, which are more apparent when the tomentum wears away. Leaves often fascicled; the rhachis with the short petiole only $2\frac{1}{2}$ or 3 lines long. Leaflets usually 7, barely a line and a half long, densely tomentose-silky both sides, not perceptibly glandular. Spike terminal, sessile or short-peduncled, mostly capitate, less than an inch long, thick. Flowers about 3 lines long. Stamens 10. — This may be placed next to *D. mollis* in the arrangement of the North American species given in Pl. Wright. 2. p. 41.

Dalea Emoryi (sp. nov.): fruticosa, ramosissima, pube brevi mollissima cano-tomentosa, glandulis parvis punctata; foliolis 1 – 3-jugis anguste oblongis cum impari duplo longiore lineari; spicis brevibus densis plurifloris; calycis villosi dentibus subulatis tubo brevioribus; "corolla purpurea." — On the desert table-lands of the Gila, June, 1852. — This was first gathered by Colonel Emory, to whom the species is accordingly dedicated, and is the second species mentioned by Dr. Torrey, in Emory's Report, p. 139.* Mr. Thurber's specimens are past flowering. It should probably stand near *D. scoparia.* The orange-colored or reddish glands are nearly concealed by the fine white wool; on the calyx they are in rows between the ribs.

Dalea spinosa (sp. nov.): fruticosa, ramosissima, parce glanduloso-pustulata, pube minuta appressima canescens; ramulis rigidis intricatis in spinas pungentes abeuntibus; foliis simplicissimis sparsis anguste cuneatis vel sublinearibus emarginatis subsessilibus crassiusculis; floribus secus ramulos ultimos laxe spicato-congestis subpedicellatis patentibus folio seu bractea parva caduca stipatis; calycis dentibus late ovatis obtusissimis tubo turbinato 10-costato dimidio brevioribus; corolla pulchre violacea seu in-

* The first species there mentioned, and partly described, is the *Dalea mollis*, Benth. Bot. Voy. Sulph., which, however, is not shrubby.

digotica, vexillo dilatato obcordato alisque ovalibus carina brevioribus; fructu calycem excedente. — Arroyos on the Gila; and on the Californian desert west of the Colorado, where it was also gathered by Fremont, in 1849, without flowers or fruit. — A remarkable species, allied to the New-Mexican *D. scoparia*. It is a much branched, spinescent, shrubby plant, of 4 or 5 feet in height; the branches glabrate with age, and naked. Leaves 6 to 9 lines long, from half a line to two lines wide, obscurely striate in the dried state. Flowers scattered or rather crowded and spicate along a mostly spinescent branchlet or rhachis. Calyx three lines long, including the very short pedicel, cinereous-pubescent like the rest of the plant, usually bearing a circle of large and brown pustular glands near the summit of the tube. Corolla large and much exserted, of a deep violet or indigo blue, as in *D. scoparia*; no glands found on the petals. Stamens 10. Fruit turgid, obliquely ovoid or oblong, pointed, canescent, beset with glands four lines long.*

HOSACKIA (SYRMATIUM) ARGOPHYLLA (sp. nov.): suffruticosa, undique dense sericeo-tomentosa, incana; ramis elongatis decumbentibus; foliolis 3–5 obovatis obtusis; capitulis brevissime pedunculatis plurifloris foliolo unico bracteatis; dentibus calycis

* The characters of two more shrubby species, gathered in nearly the same region by Colonel Fremont, in his second expedition, are subjoined.

DALEA FREMONTII (Torr. ined.): fruticosa, ramosissima, parce glanduloso-punctata, sericeo-puberula; foliis petiolatis simplicibus obovato-spathulatis vel plerisque trifoliolatis, foliolis obovatis; floribus secus ramulos subspinescentes sessilibus laxe spicato-confertis patentibus singulis aut folio aut sæpius bractea parva subulata stipatis; dentibus calycis acutissimis tubo campanulato vix costato subæquilongis, 2 superioribus triangulatis, cæteris subulatis; corolla purpurea; vexillo obcordato alis et carina fere æqualibus. — Mountains of the Pah-Utah country, S. W. California; on rocks; May, *Fremont.* — Apparently a low or depressed shrub, with copious reddish-purple flowers, of 4 or 5 lines in length. Calyx minutely silky-pubescent, like the other young parts of the plant, beset with many inconspicuous glands. Rhachis beset with a few minute setæ. Leaflets, or blade of the occasionally simple leaf, three lines long, shorter than the petiole.

DALEA ARBORESCENS (Torr. ined.): ramosissima, fere eglandulosa, subspinescens; ramis adultis glabratis, novellis cum foliis calycibusque cano-tomentosis; foliolis bijugis cum impari approximatis obovatis; floribus in spicam densam brevem congestis; bracteis parvis subulatis; dentibus calycis acuminatis tubo campanulato æquilongis, 2 superioribus oblongo-triangulatis, cæteris angustioribus lanceolatis; petalis (purpureis?) fere æqualibus. — Mountains of San Fernando, a southern branch of the Sierra Nevada, California; April, *Fremont.* — "A small tree!" Glands scarcely any; a few minute tubercular ones occasionally found on the branchlets when denuded of the dense woolly covering. Leaves petioled; the leaflets only 2 or 3 lines long. Spikes ovate or oblong. Flowers 5 or 6 lines long; the calyx large in proportion; the tube obscurely striate. Vexillum obcordate. — A remarkable species, especially for the size of its stem.

subulatis obtusis tubo dimidio brevioribus; legumine canescente. — San Isabel, California, on rocks; May, 1852. Also gathered by Fremont, on the eastern side of the Sierra Nevada. — Decumbent branches or stems two feet long, densely white-tomentose. Stipules obsolete. Leaves and calyx clothed with a very dense, appressed, silvery and silky tomentum: leaflets 3 to 6 lines long, all roundish-obovate. Flowers (as large as in *H. tomentosa*) in nearly sessile or very short-peduncled axillary capituli, which are crowded along the upper part of the virgate branches, so as to form a kind of interrupted spike, the clusters mostly exceeding the subtending leaf. Pedicels none. Corolla yellow. Legume falcate, compressed, rostrate, containing one large and oblong seed. — The *Hosackia tomentosa* of Bentham, which is probably that of Hooker and Arnott (who perhaps wrote "folium" in place of *foliolum* in describing the bract, and also the *Syrmatium tomentosum* of Vogel), is incorrectly said to have the calyx-teeth shorter than the tube, nor are the "flowers much smaller than those of *H. decumbens*" as stated in Torr. and Gray, Fl. N. Amer. The corolla, however, is decidedly shorter in proportion to the calyx; the teeth of which are very slender, or subulate-setaceous, and for the most part fully as long as the tube. In the present species the teeth are very much shorter and blunter, and the whole calyx, like the foliage, is densely clothed with a very different silvery-silky tomentum; the stems are woody at the base, &c. *Syrmatium*, Vogel (the *Drepanolobus* of Nuttall) is too closely connected with *Hosackia* to be generically separated. The whole genus, augmented by several still unpublished species, greatly needs a thorough revision.

829. Acacia? crassifolia (sp. nov.): fruticosa, aculeis sparsis et substipularibus vix recurvis armata; ramis foliisque glabris glaucescentibus; pinnis unijugis glandula petiolari interposita; foliolis unijugis pro genere maximis (sesqui-bipollicaribus) dilatatis cuneato-rotundis impetiolulatis crasso-coriaceis utrinque consimilibus flabellato-7-nerviis et reticulato-venosis; pedunculis generalibus axillaribus et terminalibus folia excedentibus racemoso-capituliferis, partialibus solitariis sæpiusve binis vel ternis pubescentibus ultra medium obsolete unibracteolatis; capitulis globosis; lobis corollæ infundibuliformis calyceque paullo breviore canescenti-pubescentibus. — In the mountain pass of La Peña, Cohahuila; November, 1852. — The specimen of this most anomalous *Acacia*, as it appears to be, is in flower only. It is said to belong to a shrub of 6 to 10 feet in height. Branches armed with a few scattered, rather stout prickles of 2 or 3 lines in length, and usually with a pair of similar ones subtending the petiole. The latter a quarter or half an inch long, occasionally armed with a solitary prickle underneath, and at its apex above, between the pinnæ (which are reduced to a single pair),

furnished with a depressed and concave gland. The two partial petioles are about the length of the main petiole, and are terminated by a single pair of leaflets, of a thick and firm texture, and of an extraordinary size for this genus, being often an inch and a half in length, and $1\frac{1}{2}$ to 2 inches in breadth, and with their strong and salient nerves, as well as their branching veins, equally conspicuous on both sides. The foliage, inflorescence, and general habit of the plant would refer it rather to *Pithecolobium* than to any other genus. But the stamens are ochroleucous and not monadelphous: they are barely three lines long, and less than twice the length of the corolla. The tube of the latter is glabrous where it is covered by the somewhat turbinate and five-toothed calyx. Ovary oval-oblong, short-stipitate, glabrous, containing several ovules. Unless the fruit furnishes some peculiar characters, the plant must remain in the genus *Acacia*.

Potentilla Thurberi (sp. nov.): multiceps, viridis, subpubescens; caulibus e rhizomate crasso adscendentibus (pedalibus et ultra) plurifloris; foliis glabellis membranaceis, radicalibus digitatis 5 – 7-foliolatis, petiolo patentim piloso, foliolis sessilibus obovato-oblongis grosse serratis, caulinis parvulis subsessilibus trifoliolatis; stipulis 2 – 3-dentatis; floribus laxe cymoso-paniculatis longiuscule pedicellatis; segmentis calycinis accessoriis oblongo-lanceolatis sepala æquantibus petalis atro-sanguineis obcordato-rotundis vel emarginatis paullo brevioribus; receptaculo conico breviter villoso; acheniis glabris vix rugulosis; stylo fere terminali. — Near Santa Rita del Cobre, New Mexico; August, 1851. — This remarkable species, which appears not to have been seen either by Mr. Wright or Dr. Bigelow, — who largely collected in the same region, — is one of those which invalidate the genus *Comarum*. It is manifestly allied to the Mexican *P. comaroides*, of Humboldt, though very distinct from it, and belongs to the *Herbaceæ*, *Multicipites*, *Ser.* 2, *Multifloræ*, *Rectæ*, of Lehmann's recent arrangement. Petioles of the radical leaves about 3 inches long; the leaflets $1\frac{1}{2}$ to 2 inches long, green both sides, coarsely and obtusely serrate almost to the base. Leaflets of the lowest cauline leaves nearly similar; the others with fewer teeth; the uppermost reduced to small and cuneate three-toothed bracts. Inflorescence minutely pubescent. Pedicels 5 to 12 lines long. Calyx sparingly pilose. Petals about 3 lines long. Stamens 25 to 30, with slender and subulate filaments. Disc nearly as in *P.* (*Comarum*) *palustris*. Receptacle enlarged in fruit, and scrobiculate.*

* Specimens of this striking *Potentilla* have just come to hand, collected by Dr. Henry, of the United States Army, on the Rio Mimbres, and by Dr. Bigelow, I believe from the mountains east of the Rio Grande.

## PETALONYX, Nov. Gen. Loasacearum.

Calyx tubo breviter cylindraceo cum ovario connato; limbo 4 – 5-diviso, segmentis linearibus tubum adæquantibus deciduis. Petala 4 – 5, disci epigyni margini inserta, calycis segmentis alterna, iisdem duplo longiora, decidua, longissime unguiculata; ungui filiformi sursum marginato laminam parvam ovato-spathulatam gerente. Stamina 4 – 5, cum petalis inserta, iisdem alterna et longiora: filamenta capillaria: antheræ didymæ, basi fixæ, biloculares, inappendiculatæ. Stylus capillaris: stigma simplex. Ovarium uniloculare. Ovulum unicum, ex apice loculi suspensum, anatropum. Fructus parvus, utriculatus, haud angulatus, fragilis, semine obovato repletus. Testa lævis membranacea, basi chalaza orbiculari notata: endopleura tenuis. Embryonis exalbuminosi cotyledones ovales, crassæ, carnosæ: radicula brevissima supera. — Herba erecta, pube brevi cinerea aspera undique hirtello-scabra; radice perenni? foliis alternis sessilibus ovatis parvulis subintegerrimis; floribus parvis folioso-bracteatis in capitulas vel spicas breves ramos terminantes congestis; petalis albidis.

Petalonyx Thurberi. — Valley of the Rio Gila; June, 1850. — An herb of a foot or two in height, probably from a perennial root, brittle; the stems bearing numerous short and simple flowering branches above, cinereous throughout, as are the leaves, &c., with a fine and short, appressed (on the stem retrorse) pubescence, composed of simple and sharp-pointed hispid hairs, the surface of which is shown to be very rough under a lens; thus the foliage and branchlets are somewhat adhesive in the manner of *Mentzelia*. There are no larger bristles, as in that genus. Leaves (the lower fallen) three fourths of an inch long, decreasing on the branches until they become only 3 lines in length, ovate or triangular-ovate, thickish, brittle in the dried state, one-nerved, and with one or two rather obscure lateral veins on each side, entire or very obscurely 2 – 4-toothed. Spikes or heads about half an inch long, dense; the bracts similar to the rameal leaves, but becoming pale and apparently scarious, often toothed at the base, each subtending a single sessile flower, or sometimes three such flowers. Bractlets 2, at the base of the decided calyx, small, linear. The flowers are stated to be white or whitish, but in soaking they impart a yellow tinge to the water. Æstivation of the calyx and corolla not determined. Calyx 2 or $2\frac{1}{2}$ lines long, including the slender lobes, minutely hispid; the tube wholly connate, the limb being divided quite down to the summit of the ovary. Disc small and flat, crowning the abrupt summit of the ovary. Claws of the petals 2 lines or more in length, sparingly hispid outside;

their lamina less than a line long, ovate, sometimes appearing subcordate by the inflection of the margins of the claw at its summit, but when explanate it is found to be ovate-spatulate, with a tapering base, the surface minutely veined. Filaments attaining the length of half an inch, glabrous: anthers small, with no apparent connective. Style resembling a filament, terminated by a minute and simple stigma. Ovary not ribbed, angled, nor appendaged, ripening without much change, or any considerable enlargement, into a thin and fragile hispid-scabrous utricle, $1\frac{1}{2}$ or 2 lines long, from which the calyx-lobes fall, and which at length breaks in pieces irregularly. Seed filling the cell, obovate, pointed at the hilum, smooth. Cotyledons thick, plano-convex; radicle short, acute.

Botanists will recognize in this plant a very interesting addition to the tribe or suborder *Gronovieæ*, composed of those *Loasaceæ* which have the ovules reduced to a single one, suspended from the summit of the cell, and the seed destitute of albumen. The present genus is especially remarkable for the very long-clawed petals; from which character the name is derived. It forms in some respects a connecting link between *Gronovia* and *Cevallia;* while the anthers are those of a *Mentzelia.* Professor Fenzl would probably recognize the petals of *Petalonyx* as homologous with the inner series of the perianth of *Cevallia*, unless, indeed, on comparing them with the stamens of the latter genus, surmounted by petaloid tips, these slender petals were regarded as an external series of stamens transformed into staminodia. But I can draw no line of distinction between true petals and an external series of sterile, anantherous stamens, alternate with and next within the sepals.

## EREMIASTRUM, Nov. Gen. Compositarum.

Capitulum multiflorum, heterogamum, heterochromum; fl. radii uniserialibus ligulatis fœmineis; disci tubulosis hermaphroditis. Involucri subbiserialis squamæ linearilanceolatæ, laxæ, æquilongæ, foliaceæ, marginibus hyalinis fimbriatis alatæ. Receptaculum hemisphæricum, nudum. Ligulæ circiter 20, elongatæ. Corollæ disci subcylindricæ, tubo proprio brevissimo, limbo 5-lobo. Styli rami plani, appendice brevissima obtusissima. Achenia compressa? hirsuta, binervia. Pappus in radio et disco conformis, brevis, duplex; exterior e paleis 10 – 12 oblongo-cuneatis setoso-palmatifidis; interior e setis totidem rigidis scabris inæqualibus, nempe, 5 – 6 paleas bis superantibus corollæ disci dimidio brevioribus, et 5 – 6 alternis minoribus. — Herba pumila, monocarpica, cinereo-hispida; foliis alternis lineari-spathulatis; ramis capitulum majusculum basi foliosum gerentibus; ligulis albis.

EREMIASTRUM BELLIOIDES. — On the Californian desert, not far west of the Colorado; January, 1852. — A single flowering specimen was picked up by Mr. Thurber, while crossing this desert on foot. The plant is two inches high, from a slender annual root; the first head borne when only an inch high; the slender branches probably attaining several inches in length in the course of the season. Leaves half an inch long; the uppermost crowded and as if involucrate round the head. Scales of the involucre three lines long, acuminate, hispid outside. Ligules three lines long, oblanceolate; the tube a little hairy. Mature achenia not seen. — I unwillingly add another to the two already known North American genera of De Candolle's subdivision *Belliecæ;* namely, *Distasis* (*Diplostelma*, Gray, Pl. Fendl.) and *Chætopappa*, each of a single species. The present plant is pretty well distinguished from these in habit and character; but on the other hand it makes perhaps too near an approach to those species of *Erigeron*, such as *E. concinnum*, which exhibit rather few bristles and manifest squamellæ in the pappus. The generic name alludes to the habitat of this plant; namely, an Asteroid plant of the desert.*

MELAMPODIUM LONGICORNE (sp. nov.): annuum, hispidulum, diffuse ramosum; foliis lanceolatis obtusis integerrimis; pedunculis e dichotomiis ortis gracilibus monocephalis; involucri squamis internis fructiferis 7 – 10 nervoso-striatis dorso vix muricatis apice in cornu longissimum extus sericeo-puberulum apice circinnato-revolutum productis; ligulis (flavis) minimis. — Near Santa Cruz, Sonora; September, 1851. — Excepting the long horns, which are so conspicuous in this species (being a quarter of an inch in length, while the fructiferous body of the involucral scale is only two lines long at maturity), and the longer peduncles in the lower forks, this much resembles the *M. hispidum*, H. B. K., or at least the No. 1205 of Mr. Wright's collection, which was gathered in the same region with the present plant, and at nearly the same time. In Mr. Wright's plant, moreover, the fructiferous scales are not only truncate but sparsely tuberculate: in ours they are only a little roughened with some minute projections. The long horns give the heads the appearance of those of *Tragoceras zinnioides*, as figured by Kunth.†

* I have recently seen depauperate and precocious specimens of this plant, gathered in the same district by Dr. J. M. Bigelow, early in the present year. Fully developed specimens with mature achenia are greatly needed.

† To the *Melampodineæ*, which has become an incongruous group, must, from its characters, be referred the plant described under the name of *Heterospermum dicranocarpum*, in Plantæ Wrightianæ, 1. p. 109. Mr. Wright's specimens bore some mature achenia on the receptacle, from which everything else had

Dysodia porophylloides (sp. nov.): glabrum, e basi frutescente ramosissimum; ramulis striatis superne fere nudis monocephalis; foliis parvis plerisque alternis bi-tripartitis, segmentis filiformi-subulatis mucronatis eglandulosis, superioribus in bracteas subulatis minimis transeuntibus; involucro turbinato 12-14-phyllo basi bracteis totidem brevissimis subulatis integerrimis muticis cincto; ligulis paucis involucrum et pappum 10-paleaceum vix superantibus; receptaculo fere nudo. — Sandy hills, near San Felipe, between San Diego and the Colorado, California; May, 1852. — Branches rigid, $1\frac{1}{2}$ to 2 feet high, from a frutescent base. Leaves (those of the flowering branches alone seen) from nearly an inch to a quarter of an inch long, gradually reduced into bracts of one or two lines in length; the larger with their divisions sometimes 1-2-toothed, mucronate, but not setigerous. Involucre about half an inch long; the scales coalescent into a cup, linear, beset with oblong or linear glands; their free tips somewhat scarious, rather obtuse. The few and inconspicuous rays consist of a linear ligule, the lower part of which is convolute around the style, while its expanded apex very little surpasses the stigmas. Pappus 3 lines or more in length; the paleæ much like those of *D. porophylla*, but the undivided portion considerably longer.

Psathyrotes incisa (sp. nov.): arachnoideo-lanata; caulibus humifusis dichotomis; foliis cuneato-oblongis argute inciso-lobatis, lobis dentibusve cuspidato-acuminatis; pe-

fallen. My kind friend Dr. Torrey having furnished me with some sketches and flowering heads, from specimens subsequently gathered by Dr. J. M. Bigelow, while connected with the Mexican Boundary Commission, I have learned that the plant is not a *Heterospermum*, although allied to that genus, but it forms a new generic type, the characters of which are briefly subjoined.

DICRANOCARPUS, Nov. Gen.

Capitulum pauciflorum; floribus exterioribus 3-4 fœmineis subradiatis, ligula minima 2-3-loba stylo breviore; disci totidem sterilibus, tubo corollæ cylindrico, limbo cyathiformi 5-fido. Involucrum 1-2-bracteolatum (bracteolis linearibus parvis), 3-4-phyllum: squamæ oblongæ, obtusæ, membranaceæ, erectæ, subplanæ, demum deciduæ. Receptaculum planum: paleæ lineares parvæ inter flores. Antheræ oblongæ, ecaudatæ. Stylus fl. masc. inclusus, indivisus, apice clavato pubescens; fl. fœm. bifidus, ramis inappendiculatis. Ovaria disci inania, epapposa. Achenia (radii) difformis, nempe 1-2 linearia vel subulata, subteretia, lævia, persistentia, aristis 2 validis lævissimis divergentibus seu recurvis persistentibus cornuta; cætera breviora et crassiora, intus sæpe tuberculato-rugosa, aristis brevioribus vel obsoletis. — Herba annua, gracilis, fere glabra, *Heterospermi* facie, microcephala; foliis oppositis 3-5-sectis, summisve integris, filiformibus; capitulis solitariis pedunculatis; floribus flavis.

Dicranocarpus parviflorus. — *Heterospermum dicranocarpum*, Gray, Pl. Wright. 1. p. 109.

dunculis alaribus gracilibus monocephalis; involucri squamis oblongo-lanceolatis acutatis haud striatis. — On the Californian desert near the Rio Colorado (along with *Eremiastrum*), February, 1852. — The specimen (which is just beginning to flower) evidently indicates a third species of *Psathyrotes*, of nearly the habit of *P. annua*. The plant is clothed with thicker and longer wool (which appears to be deciduous with age); the cuneate leaves are deeply and sharply incised; the naked peduncles acquire the length of $1\frac{1}{2}$ or 2 inches, and bear a larger head than that of *P. annua;* the pappus, as in that species, is not much shorter than the corolla, the lobes of which are similarly, but less strongly, glandular-villous outside. — *P. annua* was also found by Mr. Thurber, at Big-Horn Mountain on the Gila, June, 1852; in this region (and not properly in New Mexico) Mr. Gambell probably gathered the specimen described by Nuttall. Dr. Torrey also informs me that the plant was gathered by Colonel Emory, in his first exploration, and that it is his *Tetradymia* (*Polydymia*) *ramosissima*, described in Emory's Report, p. 145, where it is suggested as the probable type of a new genus. Had I been aware of the fact, I should probably have adopted for the genus the name suggested by Dr. Torrey, who had rightly indicated the affinities of the plant, and whose description was published in the same year with that of Mr. Nuttall. Mr. Thurber notes that the flowers of *P. annua* are not ochroleucous, but *bright yellow*, and the leaves are aromatic.

## BARTLETTIA, Nov. Gen. Compositarum.

Capitulum multiflorum, heterogamum, radiatum; ligulis uniseriatis fœmineis. Involucrum subtriseriale, campanulatum; squamis oblongo-lanceolatis, exterioribus minoribus. Receptaculum convexo-conicum, tuberculato-alveolatum. Corollæ tubo gracillimo subpiloso; disci fauce infundibuliformi, limbo 5-lobo; ligulæ oblongæ. Styli rami graciles, plani, lævi, fl. disci apice capitellato-truncato tantum puberuli, radii setula apiculati. Achenia (valde juniora) radii et disci conformia, oblonga, compressa, marginibus uninervatis longe ciliata. Pappus uniserialis, e setis capillaribus circiter 20 tenuibus sed rigidulis dentato-barbellulatis corolla disci brevioribus. — Herba annua, parvula, glabella; foliis in caule brevissimo plerisque alternis longe petiolatis rotundatis denticulatis sæpe trilobis; pedunculis scapiformibus (spithamæis) monocephalis; floribus flavis.

Bartlettia scaposa. — On a prairie, near Corralitas, Chihuahua, August, 1852. — Leaves sparsely hirsute, but soon glabrate; the petioles an inch long: the blade only

half an inch in diameter. There are sometimes one or two minute leaves near the base of the scape-like peduncles; otherwise these are entirely naked, slender, and 4 to 6 inches long. Head rather large for the size of the plant. Involucre somewhat campanulate, 4 lines long, shorter than the disc; the scales about 20, sparsely and minutely hirsute outside, thin, indistinctly 2 – 3-nerved, the inner ones with scarious margins, the exterior successively shorter and narrower. Rays about 12; the ligules 3 or 4 lines long, oblong, tridenticulate at the apex, bright yellow. Tube of the disc-corollas longer than the throat and limb. Bristles of the pappus as delicate as in a *Senecio*, but a little rigid, probably from being barbellate with strong denticulations, much as in *Arnica*, but more sparsely so. — This little plant is excluded from the vast genus *Senecio* by its imbricated involucre, and its scanty, uniserial, and barbellulate pappus; from *Aronicum*, by the uniserial pappus and the elongated branches of the style; from *Arnica*, by the alternate leaves and the whole character of the style; and from all these genera by its strongly convex or conical, tubercular-alveolate receptacle, and the flat achenia (judging from the ovaries), fringed with strongly ciliate margins. — The genus is dedicated, at Mr. Thurber's request, to John R. Bartlett, Esq., the United States Commissioner of the Boundary Survey at the time and under whose orders this collection was made, and the author of an elaborate work giving an account of this survey and of the physical character, productions, antiquities, and ethnology of the regions visited.

Perezia Thurberi (sp. nov.): glanduloso-puberula, subviscida; caule herbaceo 1 – 3-pedali simplici crebe folioso; foliis membranaceo-chartaceis ovato-oblongis oblongisve basi cordata semi-amplexicaulibus scabrellis eximie reticulatis creberrime spinuloso-denticulatis dentatisve, inferioribus obtusis, infimis fere obovatis, superioribus acutatis; corymbis polycephalis bracteatis in thyrsum demum oblongum digestis; involucro 5 – 6-floro, squamis paucis triseriatis minute glandulosis omnibus acuminatis, extimis subovatis, interioribus oblongis et lato-linearibus discum subæquantibus; pappo albo, setis rigidulis. — Rocky hills, near Santa Cruz, Sonora; September, 1851. — "Viscid and aromatic." Leaves crowded, $2\frac{1}{2}$ to 4 inches long, the larger 2 inches wide, the upper gradually reduced to subsagittate or lanceolate bracts. Heads crowded in a compound corymb, or, in larger and fully developed specimens, forming an oblong and lax thyrsus of six inches or more in length. Involucre 3 or 4 lines long, rather cylindraceous than turbinate, of 9 or 10 cuspidate-acuminate scales. Corolla apparently purplish. Achenia glandular. Pappus rather copious; the bristles somewhat rigid, strongly scabrous, obscurely thickened at the apex. — This most resembles some states of *P.*

*Wrightii;* but the rather chartaceous leaves are more reticulated and roughish, the corymb is generally thyrsiform, the involucre fewer-flowered and proportionally longer, its scales are abruptly pointed, and the pappus is much stiffer. In the foliage, inflorescence, &c., it resembles *P.* (*Acourtia*, DC.) *microcephala*, which must have more flowers in the head, and narrower involucral scales. *P. Humboldtii* (the *Proustia Mexicana* of Don and the original *Dumerilia* of Lessing), the only five-flowered species hitherto described, is said to be a shrubby plant, with leaves only an inch or two in length. — The present species plainly shows that *Dumerilia* has no claim to the rank of a genus.

STEPHANOMERIA THURBERI (sp. nov.): caule virgato simplici puberulo profunde striato bipedali superne longe aphyllo ad apicem in ramos floriferos paucos paniculatos diviso; foliis runcinatis, radicalibus oblongo-spathulatis lobis creberrimis, caulinis infimis sublinearibus, superioribus minutis subulatis; capitulis (pro genere magnis) sparsis; involucro circiter 20-floro. — On the Sierra de los Animos, Sonora; June, 1851.* — "Flowers pink, fragrant." — This is the largest-flowered species of the genus known; the involucre and disc being almost half an inch in length, and the flowers are much more numerous in the head than in any other. The stem is unbranched in the specimen, except at the summit, and the leaves occur only at or near the base; they are two inches or more in length, and the radical ones three quarters of an inch wide, a little pubescent, or soon glabrate. The root is probably biennial. Pappus white, very plumose. Achenia not seen; the flowers being all young. I have not seen Nuttall's *S. elata;* but that species is stated to be only ten-flowered, and is probably identical with Bentham's *S. virgata.*

JACQUINIA PUNGENS (sp. nov.): ramulis junioribus puberulis; foliis confertis subverticillatis lineari-lanceolatis valde rigidis aculeato-acuminatis aveniis margine subrevolutis subtus punctatis; floribus ad apicem ramorum corymbosis aurantiacis pedicello paullo brevioribus; fructu globoso. — Hills between Rayon and Ures, Sonora; October (with unripe fruit and some flowers). — A shrub from 8 to 12 feet high, with the very rigid and pungent, pale leaves (about an inch long and two lines wide) much crowded on the short branchlets, subsessile, either alternate, or imperfectly verticillate, or opposite, veinless, the midrib and margins thickened underneath. Corymb several-flowered,

* The same species occurs in a collection made last year in the neighborhood of the Mimbres, by Dr. Henry, U. S. A., which has just been received.

exceeding the leaves. Pedicels and the orbicular sepals glabrous. Corolla about 4 lines long. Anthers subcordate. Unripe fruit 7 or 8 lines in diameter, yellowish. — This is perhaps the Mexican plant figured in Moçino and Sesse's collection of drawings, and doubtfully referred by De Candolle to *J. ruscifolia;* but it does not belong to that species.

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The remaining portions of Mr. Thurber's collection are rich in undescribed plants; but the greater part of these also occur in Wright's, Bigelow's, and Parry's collections. Two plants, however, found by Mr. Thurber alone, deserve particular notice; — one, a remarkable new genus of Eriogoneæ, *Centrostegia*, found on the eastern borders of California, the characters of which have been contributed to the forthcoming volume of De Candolle's Prodromus; — the other, the new parasitic flower mentioned by Mr. Thurber (supra, p. 315), as growing on the branches of a shrubby *Dalea*. An account of it is subjoined.

Pilostyles Thurberi (sp. nov.): bracteis sepalisque rotundis margine nudis; ovario semisupero; stigmate disciformi sessili medio subumbonato. — On a small mountain, near the Gila River; June, 1850; parasitic on the branches of *Dalea Emoryi*.

To the four plants already known of the *Apodantheæ*, a group appended to the *Rafflesiaceæ*, Mr. Thurber has made an interesting addition in the present species. These plants are simply single flowers, surrounded by a few bracts, parasitic and sessile on the stems of various Dicotyledonous plants, mostly of Leguminosæ. While the Rafflesias are extremely large, — the flower of *R. Arnoldi*, as is well known, measuring three feet in diameter, — the largest of the Apodantheæ is only three lines in breadth or length, and most of them, like the present species, of barely half that size. The tribe, so far as known, is confined to America; the original species of *Pilostyles*, Guill. (*Frostia*, Bertero, in Endl.) inhabiting Chili, and the two others being from Brazil, while the single *Apodanthes*, Poit. was found in French Guiana. The present discovery extends the range of the tribe into the temperate region of North America. The late Mr. Gardner, who published (in Hooker's Icones Plantarum, t. 144 and t. 155) the two Brazilian species, confidently referred them all to the older genus *Apodanthes*, and perhaps with sufficient reason. But Mr. Brown, in his conspectus of the Rafflesiaceæ, appended to his second memoir on *Rafflesia*, &c. (in Trans. Linn. Soc. 19, part 3), after having examined original specimens of *Apodanthes Caseariæ*, preserved in spirits, has retained the two genera; *Apodanthes* having a more manifest calyx and corolla, the

former gamophyllous and merely four-lobed, and the cavity of the ovary four-sided; while in *Pilostyles* the homogeneous and continuously imbricated (usually more numerous) floral leaves are only to be arbitrarily divided into bracts, sepals, and petals, and are apparently distinct from each other, although more or less adnate to the ovary, except perhaps the outermost and lowest, and the cell of the ovary is not angled. The male flowers of *Apodanthes*, too, are stil unknown; so they are, indeed, in all the species of *Pilostyles*, except *P. Berteri*. Mr. Thurber's specimens furnish only female flowers. These most resemble those of *P. Blanchetii*, R. Br. (*Apodanthes Blanchetii*, Gardn.); but the sepals, &c. are not ciliate, nor are they adnate to more than the lower half of the surface of the ovary; and the stigma is thicker, more dilated and disc-shaped, and slightly umbonate in the middle. The floral envelopes appear to accord very well with those of *P. Calliandræ*, R. Br. (*Apodanthes Calliandræ*, Gardn.); but in that species the ovary is represented as almost wholly free, and its apex contracted into an obtuse point terminated by a small truncate stigma. The broad and depressed stigma of *P. Thurberi* rests directly upon the summit of the globose-ovoid ovary, without the intervention of any style or contracted portion, and is wheel-shaped, or disc-shaped, with a thickened (stigmatic) margin; the upper surface is flat, with a slightly projecting umbo in the centre, which itself is obscurely perforated and cruciate, much as the stigma is represented in *Apodanthes Caseariæ* by Poiteau. All the floral envelopes appear to persist on the fleshy but thin pericarp. The ovules and seeds, as in the tribe, are attached to the whole parietes of the ovary, which they thickly and uninterruptedly cover, filling the cell; they are orthotropous, and borne on slender funiculi of their own length or longer. The seeds are oval, acutish at both ends, not very minute, being about one eighth or one tenth of an English line in length; the testa is thickish, obscurely punctate or reticulated, and conformed to the minutely granular or cellular nucleus, which, according to Mr. Brown, is a homogeneous embryo.*

* A still more remarkable parasitic plant of the same region, recently brought to notice by Mr. Gray, the surveyor of a southern Pacific Railroad route, is about to be published by Dr. Torrey, under the name of *Ammobroma Sonoræ*. It is a large and fleshy root-parasite, growing in the naked sands of the desert at the head of the Gulf of California, where it furnishes the Papigo Indians with an important article of food. The fresh plant is cooked by roasting, when it resembles the Sweet Potato in taste, or it is dried and mixed with other and less palatable kinds of food. Dr. Torrey finds it to constitute a new genus, of the small group or family represented by the little-known and anomalous *Corallophyllum* of Kunth, and the *Pholisma* of Nuttall; in the floral structure and the scales more like the latter, from which it is distinguished by its woolly-plumose calyx and its singular cyathiform inflorescence.

*** Of the Leguminous tree mentioned on p. 313, some fruiting specimens occur in the collection made by Dr. J. M. Bigelow, in Lieut. Whipple's expedition; and Mr. Thurber has fortunately just received others, with a few blossoms, in a small collection made on the Gila by Mr. Gray. The plant appears to be most nearly allied to the South American genus *Coursetia*, DC., to which, however, it cannot well be annexed; and perhaps it may be added to the group of genera enumerated by Mr. Bentham (in Pl. Jungh. p. 249), as making a transition from the Galegeæ to the Dalbergieæ. As it appears to constitute a new generic type, I am happy to further Mr. Thurber's wishes that it may bear the name of our common friend and excellent botanical associate, Stephen T. Olney, Esq., author of the Catalogues of the Plants of Rhode Island, &c.

OLNEYA, Nov. Gen. Leguminosearum.

Calyx campanulatus, quadrilobus; lobis ovatis obtusissimis, supremo latiore emarginato-bifido. Vexillum orbiculatum, profunde emarginatum, reflexum, unguiculatum, auriculis latis inflexis appendiculatum, bicallosum. Alæ oblongæ carinam incurvam obtusam æquantes. Stamina 10, æquilonga, filamento vexillari libero diadelpha: antheræ uniformes. Discus cupularis. Ovarium substipitatum, pluriovulatum: stylus incurvus, supra medium undique villosus: stigma depresso-capitatum. Legumen turgidum, dispermum, vel sæpissime medio seu prope apicem monospermum, obliquum, utrinque constrictum, glandulosum, tarde dehiscens, valvulis crasso-coriaceis. Semen magnum, estrophiolatum, ovale. Cotyledones carnosæ, crasso-planæ, radiculæ gracili incurvæ accumbentes. — Arbor 15 – 20-pedalis, pube minuta canescens; aculeis infrastipularibus geminis, interdum nullis; foliis abrupte vel impari-pinnatis multijugis; stipulis obsoletis; stipellis nullis; pedunculis folio brevioribus racemoso-plurifloris; corolla alba vel purpurascente.

Olneya Tesota. — On the table-lands of the Gila, Mr. Thurber, Mr. Gray. Near "Bill Williams' Fork," Dr. Bigelow.